

CLAIMS

What is claimed is:

1. A toy vehicle having an overall vehicle mass, the toy vehicle comprising:

a body/chassis having opposing sides, a front and a rear;

a rear pair of gyroscopic action wheels aligned with each other on a rotation axle and being operatively connected to the rear of said body/chassis;

10 at least one front gyroscopic action wheel having a rotation axle operatively connected to the front of said body/chassis; and

means for selectively driving said gyroscopic action wheels at speeds to create a gyro effect at each of said 15 wheels, said gyro effect generating centrifugal forces at each wheel, wherein the centrifugal forces are transformed in torque reactions on the entire toy when at least one of said gyroscopic actions wheels is instantaneously reversed through said driving means.

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2. The toy vehicle according to claim 1, wherein said driving means comprises:

a first motor and gearing for driving said rear pair of wheels;

25 a second motor and gearing for driving said at least one front wheel;

radio control electronic circuitry and power supply for receiving remote wireless control commands from a user, said first and second motors being independently controlled by the user.

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3. The toy vehicle according to claim 1, wherein said at least one front wheel further comprises a pair of front wheels, and wherein said driving means comprises:

10 a first reversible motor and gearing for driving a first pair of side wheels defined by one of said rear pair of wheels and one of said front pair disposed on one side of said body/chassis;

15 a second reversible motor and gearing for driving a second pair of side wheels defined by the other of said rear pair of wheels and the other of said front pair of wheels disposed on the other side of said body/chassis; and

20 radio control electronic circuitry and power supply for receiving remote wireless control commands from a user, said first and second motors being independently controlled by the user.

4. The toy vehicle according to claim 3, further comprising:

25 an inside track distance defined as the distance between said opposing pairs of wheels; and

a wheelbase defined by the distance between the rotation axle of each of the two wheels of each respective side pairs, wherein said inside track and said wheelbase are substantially equal.

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5. The toy vehicle according to claim 3, wherein said driving means further comprises:

a first set of gears operatively connected to said first motor and transmitting rotational motion of said motor 10 to said first side pair of wheels equally; and

a second set of gears operatively connected to said second motor for transmitting rotational motion of said second motor to said second side pair of wheels equally.

15 6. The toy vehicle according to claim 5, wherein each of said wheels have a diameter, and said diameters are equal to each other.

7. The toy vehicle according to claim 5, wherein each of 20 the wheels have a diameter, said front wheels having a diameter smaller than the diameter of said rear wheels.

8. The toy vehicle according to claim 1, wherein each of said wheels have an outer circumferential surface having 25 varying coefficients of friction based on the point of

contact with a running surface on which the toy is being operated.

9. A radio controlled toy vehicle having, the toy
5 vehicle comprising:

a body/chassis having opposing sides, a front and a rear;

a rear pair of gyroscopic action wheels aligned with each other on a rotation axle and being operatively
10 connected to the rear of said body/chassis;

a front pair of gyroscopic action wheels aligned with each other on a rotation axle being operatively connected to the front of said body/chassis; and

a first reversible motor and gearing for driving a
15 first pair of side wheels defined by one of said rear pair of wheels and one of said front pair disposed on one side of said body/chassis;

a second reversible motor and gearing for driving a second pair of side wheels defined by the other of said rear
20 pair of wheels and the other of said front pair of wheels disposed on the other side of said body/chassis; and

radio control electronic circuitry and power supply for receiving remote wireless control commands from a user, said first and second motors being independently controlled
25 by a user;

wherein said first and second motors drive said gyroscopic action wheels at speeds to create a gyro effect at each of said wheels, said gyro effect generating centrifugal forces at each wheel, wherein the centrifugal forces are 5 transformed in torque reactions on the entire toy when at least one of said gyroscopic actions wheels is instantaneously reversed through said driving means.

10. The toy vehicle according to claim 9, wherein
10 driving means further comprises:

a first set of gears operatively connected to said first motor and transmitting rotational motion of said motor to said first side pair of wheels equally; and

15 a second set of gears operatively connected to said second motor for transmitting rotational motion of said second motor to said second side pair of wheels equally.

11. The toy vehicle according to claim 10, wherein each of said wheels have a diameter, and said diameters are equal
20 to each other.

12. The toy vehicle according to claim 10, wherein each of the wheels have a diameter, said front wheels having a diameter smaller than the diameter of said rear wheels, said 25 first and second gearing being adjusted to compensate for the smaller diameter of said front wheels and enable

substantially equal inch/second velocities of said front and rear wheels.

13. The toy vehicle according to claim 10, wherein each 5 of said wheels have an outer circumferential surface having varying coefficients of friction based on the point of contact with a running surface on which the toy is being operated.

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